

REMARKS

Applicants confirm their election of Group I, claims 1-44 with traverse. Claims 46 to 62 have been withdrawn from consideration, without prejudice, as being drawn to non-elected claims. The specification was objected to because it did not describe C-2. The specification has been amended to clarify that the example on page 27 is Comparison Example C-2 not C-1.

Claims 1-3, 6-10 and 15-21 were rejected under 35 U.S.C. 102(b) as being anticipated by Ranney (U.S. 6,106,866). Applicants respectfully traverse this rejection.

The current invention provides a composition of matter comprising derivatized nanoparticles comprising inorganic nanoparticles having an attached metal-ion sequesterant, wherein said inorganic nanoparticles have an average particle size of less than 200 nm. The derivatized nanoparticles of the invention are able to target and remove specific metal-ions from a solution, while leaving intact the concentrations of beneficial metal-ions. They can be utilized in numerous items and articles without significantly changing their color or appearance and they are easy to apply. The nanoparticles can be utilized to remove metal ions which are themselves contaminants, or they can be used to remove metal ions which are nutrients for biological contaminants.

In contrast, Ranney is directed towards drug delivery systems and medical imaging enhancement. The system in which the compounds of Ranney are utilized is the human body. The metal chelators/carriers described in Ranney are not intended to remove metal ions from the system, rather they appear to be intended for MRI imaging. In fact, the metal chelators in Ranney appear to be already bound to the metal when they are injected or ingested into the body. The metal is the aspect of the compound that provides the image. Therefore the compounds of Ranney do not fall within the current claims since the metal is already chelated to the bioparticle. In the current invention the particles comprise only the particle and the metal sequestant. Furthermore, all of the carriers for the metal chelators described in Ranney are organic materials, mainly organic polymers, more specifically biological polymers. Again, the current invention is distinguished from Ranney in that the claims of current invention require inorganic particles as the carrier. In fact, many of the carriers described in Ranney, such as saccharides, would actually encourage bacterial growth since they would act as a nutrient. The compounds of Ranney are utilized for an entirely different purpose than those of the current invention and would not be suitable for the use in the current invention. It


should further be noted that all of the carriers described in Ranney are water soluble. Such biomolecules could not easily be immobilized in an article such as required in claims 22 to 43 and would not serve the purpose of removing a metal from a solution and binding it to the article.

Claims 1-44 were rejected under 35 U.S.C. 103(a) as being obvious over Ranney in view of DeVoe(U.S. 4,530,963). Applicants respectfully traverse this rejection.

One skilled in the art would not combine the teachings of Ranney and DeVoe to arrive at the current invention. The compositions and technology described in Ranney and DeVoe are very different. As noted above the materials of Ranney already have the metal attached and are used for imaging in the human body. In contrast DeVoe uses metal chelating compounds to remove metal from aqueous solutions such as waste water. Additionally, the carriers described in Ranney are generally water soluble and could not be immobilized to remove metals from an aqueous environment. In contrast, DeVoe requires an insoluble composition. Furthermore, the technology of Ranney forms small organic molecules to act as carriers, similar technology could not be utilized with the inorganic carriers discussed in DeVoe to form inorganic nanoparticles. Therefore the current invention cannot be obvious over the combination of Ranney and DeVoe.

In view of the foregoing, it is believed none of the references, taken singly or in combination, disclose the claimed invention. Accordingly, this application is believed to be in condition for allowance, the notice of which is respectfully requested.

Respectfully submitted,


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If the Examiner is unable to reach the Applicant(s) Attorney at the telephone number provided, the Examiner is requested to communicate with Eastman Kodak Company Patent Operations at (585) 477-4656.